CLAIMS

I Claim:

1.   A hydraulically operated dock leveler for forming a bridge between a floor of a loading dock and a truck bed, said dock leveler comprising:

    a ramp assembly hinged at its rear edge to a supporting frame and movable through a range of raised and lowered inclined positions with a lip assembly hinged to the forward edge of the ramp assembly movable from a downward pendant position to an outwardly extended position

    a single hydraulic cylinder means connected to the supporting frame structure and to an actuator mechanism that when extending provides the force to lift the said ramp assembly and extend the said lip assembly.

    an actuator mechanism connected to and rotational around the forward hinge to affect both the lifting of the said ramp assembly and extending of the said lip assembly thus providing two modes of operation, said actuator mechanism comprising an extension crank to apply direct ramp lifting and lip extending mode positions, an actuator crank to initiate the lip extension mode when the said ramp assembly is rising near its upper inclined position, a link from the actuator assembly to the supporting frame structure to initiate the lip extension, and a spring mechanism to retract the said hydraulic cylinder and said actuator assembly when hydraulic fluid pressure is not present.

    a motor pump unit to provide fluid under pressure to extend the said hydraulic cylinder and to receive fluid when the cylinder retracts.

2.   The dock leveler of Claim 1, and wherein the said hydraulic cylinder is connected to said extension crank and to said spring mechanism with a common pin so when the system is depressurised the said cylinder and said crank will be positioned to the ramp lifting mode position by the said spring mechanism.

3.   The dock leveler of Claim 1, and wherein the said actuator mechanism, by means of the said actuator link, repositions the said hydraulic cylinder nearing the end of its extension to change the position from a ramp lifting mode to a lip extending mode so that the final extension of the cylinder extends the said lip assembly.

4.   The dock leveler of Claim 2, and wherein the said extension crank and the said actuator crank are connected by the said common pin where the said actuator crank can be free and disconnected from the said extension crank when the said lip assembly is extended.

5.   The dock leveler of Claim 4, and wherein the said extension crank is connected and disconnected from the actuator crank by means of a pin rotating within a slot.

6.   The dock leveler of Claim 3, and wherein the cylinder after extending the lip holds the ramp in its inclined position by means of the actuator mechanism.

7.   The dock leveler of Claim 3, and wherein after the lip extension is initiated the actuator link is no longer under tension.

8.   The dock leveler of Claim 4, and wherein the retraction spring is further tensioned when the actuator mechanism is extended.

9.   The dock leveler of Claim 1, and wherein when the system delivery pressure is removed the weight of the ramp assembly will retract the hydraulic cylinder allowing the said ramp assembly to lower.

10.   The dock leveler of Claim 9, and wherein when the said ramp assembly reaches full descent the flow of oil will retract the said lip assembly.

11.   The dock leveler of Claim 1, and wherein the said actuator mechanism pivots around the lip hinge in a two-component configuration

12.   The dock leveler of Claim 11, and wherein the first component actuates the second component to initiate extension of the lip.

13.   The dock leveler of Claim 11, and wherein the second component actuates the first component when the said actuator mechanism retracts.

14.   The dock leveler of Claim 11, and wherein the first component disconnects from the second component when the lip extends.

15.   The dock leveler of Claim 2, and wherein the lip is free to rotate downward when the cylinder is in lift mode position with the actuator mechanism retracted.

16.   The dock leveler of Claim 1, and wherein the said retraction spring tension is adjustable.